INTERNATIONAL STANDARD

ISO 10448

Second edition
2021-07

Agricultural tractors — Hydraulic pressure for implements

Tracteurs agricoles — Pression hydraulique pour les outils

Reference number
ISO 10448:2021(E)

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 4, *Tractors*.

This second edition cancels and replaces the first edition (ISO 10448:1994), which has been technically revised.

The main changes compared to the previous edition are as follows:

— in Clause 2, the normative references have been updated;

— in Clause 3, the term "external hydraulic service" has been deleted;

— in Table 1:

  — the tractor rear-mounted three-point linkage categories have been updated per ISO 730 and a specified flow range for tractor with rear-mounted three-point linkage category 4N and 4 has been added;

  — size 20 coupler according to ISO 5675 has been added;

  — oil temperature has been deleted;

  — the NOTE has been deleted.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Agricultural tractors — Hydraulic pressure for implements

1 Scope

This document specifies the characteristics of the hydraulic pressure from agricultural tractors to connect hydraulic devices on implements, to permit interchangeable use of various types of implements using remote cylinders and other hydraulic devices.

It applies to agricultural tractors intended for interchangeable implements.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 730, *Agricultural wheeled tractors — Rear-mounted three-point linkage — Categories 1N, 1, 2N, 2, 3N, 3, 4N and 4*

ISO/OECD 789-10, *Agricultural tractors — Test procedures — Part 10: Hydraulic power at tractor/implement interface*

ISO 5675, *Agricultural tractors and machinery — General purpose quick-action hydraulic couplers*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
coupler pair
pair of female hydraulic couplers compatible with male couplers, specified in ISO 5675, mounted on agricultural tractors and connected to the hydraulic system to allow flow from one coupler to the other

3.2
available differential pressure
steady state difference in hydraulic pressure between two coupler parts on the implement side

3.3
maximum pressure
maximum steady state hydraulic pressure at either male coupler connected to *a coupler pair* (3.1)

3.4
maximum loop return pressure
maximum steady hydraulic pressure at the male coupler returning flow to a hydraulic system that can reverse the flow through that coupler

3.5
maximum sump return pressure
<with coupler> maximum steady state hydraulic pressure at the male coupler returning flow directly to the reservoir

3.6
maximum sump return pressure
<without coupler> maximum steady state hydraulic pressure at an M22 × 1,5 or M27 × 2 thread size port, returning flow directly to the reservoir

Note 1 to entry: The thread size port is in accordance with ISO 6149-1, ISO 6149-2 or ISO 6149-3.

3.7
peak pressure
maximum instantaneous hydraulic pressure at either male coupler connected to a *coupler pair* (3.1)

4 Requirements

Pressures as listed in Table 1 should be within their limits as the flow is varied between the specified flow range limits.

The pressures shall be measured on the implement side (male couplers) which conform to either size 12,5 or 20 in accordance with ISO 5675. The test method shall be in accordance with ISO/OECD 789-10.

Table 1

Characteristic	Value	
Coupler size (ISO 5675)	12,5	20
Specified flow range per coupler pair	- 0 l/min to 30 l/min for tractors with rear-mounted three-point linkage category 1N, 1[a)] - 0 l/min to 50 l/min for tractors with rear-mounted three-point linkage category 2N, 2 and 3N, 3 and 4N, 4[a)]	0 l/min to 125 l/min for tractors with rear-mounted three-point linkage category 4N, 4[a)]
Maximum pressure	20,5 MPa	
Minimum available differential pressure	15 MPa	
Maximum loop return pressure	1 MPa	
Maximum sump return pressure, with coupler	0,5 MPa	
Maximum sump return pressure, without coupler	0,2 MPa	
Peak pressure	29 MPa	

[a)] Categories shall be in accordance with ISO 730.

NOTE Coupler size 20 according to ISO 7241 is compatible to hose size 19 per ISO 4397.